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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Giuseppe Covino

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EXAMINER

FAN, HUA

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2456

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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/568,688	<b>Applicant(s)</b> COVINO ET AL.	
	<b>Examiner</b> HUA FAN	<b>Art Unit</b> 2456	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 26 March 2009 and 04 March 2009.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 37-75 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 37-75 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 February 2006 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), filed on 3/26/2009 in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 3/4/2009 has been entered. Claims 37-75 are pending.

### ***Examiner's Note***

2. For examination purpose, claim 75 is treated as an independent claim because it incorporates all limitations of the preceding claims such as claim 37.

### ***Response to Arguments***

3. Applicant's arguments have been fully considered but they are not persuasive. All arguments are responded to in the following rejections and/or further clarifications to the corresponding claims. It is especially to be noted that the "process executor" is interpreted by the examiner using its broadest interpretation in the art, unless it is specifically defined otherwise in the specification or in the claims. Any remark, which is not in claimed language, is not being considered by Examiner.

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***Claim Rejections - 35 USC § 101***

4. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

The USPTO “Interim Guidelines for Examination of Patent Applications for Patent Subject Matter Eligibility” (Official Gazette notice of 22 November 2005), Annex IV, reads as follows:

Determining whether the claim falls within one of the four enumerated categories of patentable subject matter recited in 35 U.S.C. 101 (i.e., process, machine, manufacture, or composition of matter) does not end the analysis because claims directed to nothing more than abstract ideas (such as mathematical algorithms), natural phenomena, and laws of nature are not eligible for patent protection. *Diehr*, 450 U.S. at 185, 209 USPQ at 7; accord, e.g., *Chakrabarty*, 447 U.S. at 309, 206 USPQ at 197; *Parker v. Flook*, 437 U.S. 584, 589, 198 USPQ 193, 197 (1978); *Benson*, 409 U.S. at 67-68, 175 USPQ at 675; *Funk*, 333 U.S. at 130, 76 USPQ at 281. “A principle, in the abstract, is a fundamental truth; an original cause; a motive; these cannot be patented, as no one can claim in either of them an exclusive right.” *Le Roy*, 55 U.S. (14 How.) at 175. Instead, such “manifestations of laws of nature” are “part of the storehouse of knowledge,” “free to all men and reserved exclusively to none.” *Funk*, 333 U.S. at 130, 76 USPQ at 281.

Descriptive material can be characterized as either “functional descriptive material” or “nonfunctional descriptive material.” In this context, “functional descriptive material” consists of data structures and computer programs which impart functionality when employed as a computer component. (The definition of “data structure” is “a physical or logical relationship among data elements, designed to support specific data manipulation functions.” The New IEEE Standard Dictionary of Electrical and Electronics Terms 308 (5th ed. 1993).) “Nonfunctional descriptive material” includes but is not limited to music, literary works and a compilation or mere arrangement of data.

When functional descriptive material is recorded on some computer-readable medium it becomes structurally and functionally interrelated to the medium and will be statutory in most cases since use of technology permits the function of the descriptive material to be realized. Compare *In re Lowry*, 32 F.3d 1579, 1583-84, 32 USPQ2d 1031, 1035 (Fed. Cir. 1994) (claim to data structure stored on a computer readable medium that increases computer efficiency held statutory) and *Warmerdam*, 33 F.3d at 1360-61, 31 USPQ2d at 1759 (claim to computer having a specific data structure stored in memory held statutory product-by-process claim) with *Warmerdam*, 33 F.3d at 1361, 31 USPQ2d at 1760 (claim to a data structure per se held nonstatutory).

In contrast, a claimed computer-readable medium encoded with a computer program is a computer element which defines structural and functional interrelationships between the computer program and the rest of the computer which permit the computer program's functionality to be realized, and is thus statutory. See *Lowry*, 32 F.3d at 1583-84, 32 USPQ2d at 1035.

5. Claims 37-53 and 73 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter as follows. Claims 37-53 and 73 define “a system architecture” that does not fall within any statutory category.

6. Claim 72 is rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter as follows. Claim 72 defines a computer program product embodying functional descriptive material. However, the claim does not define a “computer-

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readable medium or computer-readable memory” and is thus non-statutory for that reason (i.e., “When functional descriptive material is recorded on some computer-readable medium it becomes structurally and functionally interrelated to the medium and will be statutory in most cases since use of technology permits the function of the descriptive material to be realized” – Guidelines Annex IV). The scope of the presently claimed invention encompasses products that are not necessarily computer readable, and thus NOT able to impart any functionality of the recited program. The examiner suggests amending the claim(s) to embody the program on “computer-readable medium” or equivalent; assuming the specification does NOT define the computer readable medium as a “signal”, “carrier wave”, or “transmission medium” which are deemed non-statutory (refer to “note” below). Or alternatively amending the claim(s) to embody the program on “computer-readable storage medium”. Any amendment to the claim should be commensurate with its corresponding disclosure.

### ***Drawings***

7. The drawings are objected to because the sequence of drawings is not in order. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for

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consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

8. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the limitation in independent claims "wherein at least one of the process executors receives instruction information, the at least one process executor being apt to modify its respective function based on the received instruction information, thereby changing the operation sequence of the at least one process executor and the base layer" must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an

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application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

***Claim Rejections - 35 USC § 112***

9. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

10. Claims 37-75 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Specifically the following limitation is not supported in the originally filed application: "wherein at least one of the process executors receives instruction information, the at least one process executor being apt to modify its respective function based on the received instruction information, thereby changing the operation sequence of the at least one process executor and the base layer".

11. Claims 37-75 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention, i.e., failing to disclose

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wherein at least one of the process executors receives instruction information, the at least one process executor being apt to modify its respective function based on the received instruction information, thereby changing the operation sequence of the at least one process executor and the base layer.

12. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

13. Claims 37-75 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. It is not clear how the limitation “wherein at least one of the process executors receives instruction information, the at least one process executor being apt to modify its respective function based on the received instruction information, thereby changing the operation sequence of the at least one process executor and the base layer” is performed without sufficient support/description in the specification or claim. In addition, it is not clear about the scope of changing the operation sequence of the at least one process executor and the base layer”, since in earlier limitations it is claimed that the process executor is part of base layer. Therefore examiner assumes “changing the operation sequence of the at least one process executor”.

***Claim Rejections - 35 USC § 103***



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14. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

15. Claims 37-74 are rejected under 35 U.S.C. 103(a) as unpatentable over Barkai et al (US publication 2002/0032769, hereafter Barkai\_US), in view of Barkai et al (EP 1150454, hereafter Barkai\_EP).

As to claim 37, Barkai\_US disclose a system architecture for managing a communication network (abstract) comprising network equipment (figure 3, components 33-34), said equipment having associated control interfaces (figure 5; interface between NEs and warehouse tier 52), the architecture comprising:

a base layer (figure 3, 5: warehouse tier 52) for proxying said interfaces and decoupling said interfaces from management functions ([0057] – [0067]); and

a support layer superposed to said base layer and comprising a plurality of agents (figure 3-5, agent tier 50 is superposed to warehouse tier 52; figure 5, agent tier 50 comprises a plurality of agents, “Provider Agent”, “Subscriber Agent”, “Device Agent”) co-ordinating operation of said base layer in order to support distributed management functionalities (figure 3 and 5; [0085]; [0060], “agent employ the message queue 72”, which is in warehouse Tier, i.e. base layer, “to transmit messages...provides message bus services throughout the distributed systems”; [0067], for device components, which is part of agent layer, “both peer and parent-child relationships are used during network management operations to provide for the intelligent collection of data and for the control of network elements”, which indicates agents coordinate base layer

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Barkai\_US does not expressly disclose said base layer comprising distributed process executors to execute in a distributed manner processes concerning management of said network, each process executor comprising at least one of a workflow engine, a rule engine, and a combination thereof; and wherein at least one of the process executors receives instruction information, the at least one process executor being apt to modify its respective function based on the received instruction information, thereby changing the operation sequence of the at least one process executor and the base layer. Barkai\_EP discloses a network management layer comprising distributed process executors to execute in a distributed manner processes concerning management of said network, each process executor comprising a workflow engine (figure 3; [0042]-[0044], device components (DCs) are equivalent to distributed process executors comprising workflow engine, see figure 3 flowchart for workflow processed by device components (DCs); [0044], lines 20-25, “distributed algorithm”; [0042], lines 42-46 for network management. Examiner interprets the terms “workflow” according to specification page 10, lines 20-30, “a work flow is essentially full or partial automation...information or tasks are passed from one participant to another for action, according to a set of procedural rules...can be represented through a flow chart with a sequence of tasks and temporal and logical dependencies between tasks...”, “workflow engine” according to specification page 10, line 31 – page 11, line 34, “workflow engine is the component in a workflow automation program that possesses all the information related to the procedures, steps in a procedure, and rules for each step”, “process executor” according to specification [0097], “Process executors for any layer are intended to be a workflow (a flowchart), a rule engine, or a combination of the two”. As disclosed by Barkai\_EP, message (information) is passed from one participant (DC) to another participant (another DC)

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for action (see figure 3, component 320, “Perform action at DC level of responsibility”), according to a set of procedural rules (as indicated in the flow chart, such as checking whether message is required by parent DC, action required within DC, etc)); and wherein at least one of the process executors receives instruction information, the at least one process executor being apt to modify its respective function based on the received instruction information, thereby changing the operation sequence of the at least one process executor and the base layer (see 112 rejections and examiner's interpretation above. See figure 3 and [0043], “an event, such as a fault or a provisioning request” is equivalent to “instruction information”; the process executor and its sequence of operation is modified based on the event, by performing the corresponding different sequence of actions based on the instruction information indicated by the event, as shown in figure 3 and [0043], for example, whether or not "Action required within DC?", "Message required to parent DC?", "Message required to Child DC?", "Messages required to Acquaintance DC?", the different sequence of actions will be performed).

At the time of invention, it would have been obvious to a person of ordinary skill in the art to combine the method disclosed by Barkai\_US with the method disclosed by Barkai\_EP regarding a network management layer comprising distributed process executors to execute in a distributed manner processes concerning management of said network, each process executor comprising a workflow engine; and wherein at least one of the process executors receives instruction information, the at least one process executor being apt to modify its respective function based on the received instruction information, thereby changing the operation sequence of the at least one process executor and the base layer. The suggestion/motivation of the combination would have been to provide a system-wide top-down flow with each DC

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performing its independent computations which collectively achieve the external request (Barkai\_EP, [0044], lines 4-7) and to provide a distribute algorithm in a bottom-up flow by propagating to other DCs which change their state and/or perform their part in the distributed system (Barkai\_EP, col. 8, lines 20-25).

Barkai\_US and Barkai\_EP have been cited as prior arts in the prior Office Action in rejection to the rest of the claims in this cloud. The teachings that applicable are respectfully maintained and incorporated by reference as set forth in the last office action.

Claims (54-70) are method claims corresponding to system architecture claims (37-53). Therefore they have been analyzed and rejected based upon system claims respectively.

Claim 72 is a computer program product claim corresponding to method claim 54. Therefore it has been analyzed and rejected based upon the method claim.

As to claim 73, see similar rejection and reasoning/citations in rejection to claim 38.

As to claim 74, see similar rejection and reasoning/citations in rejection to claim 38.

As to claim 75, see similar rejections to claims 37-53 and 73. Barkai-US discloses a network including network equipments (figure 5).

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to HUA FAN whose telephone number is (571)270-5311. The examiner can normally be reached on M-F 9am-6pm EST.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bunjob Jaroenchonwanit can be reached on (571) 272-3913. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/H. F./  
Examiner, Art Unit 2456

/Yasin M Barqadle/  
Primary Examiner, Art Unit 2456